

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAMES J. KOBE, PATRICK J. FISCHER
LEE F. SPENCER JR. and ZHIMING ZHOU

MAILED

JAN 24 2006

U.S. PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Appeal No. 2005-2652
Application 10/066,990¹

ON BRIEF

Before KIMLIN, PAK, and WARREN, Administrative Patent Judges.
PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1, 2, 4 through 15 and 23, which are all of the claims pending in the above-identified application.

APPEALED SUBJECT MATTER

The subject matter on appeal is directed to an article made of at least partially adhesive coated expanded polymeric foam substrate containing preferably a non-halogenated and antimony-

¹ Application for patent filed February 4, 2002.

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free flame-retardant. See the specification, page 6. The partially adhesive coated expanded polymeric foam substrate also has particular proportions of a plurality of expanded polymeric microspheres. See the specification, pages 3, 4, 6 and 10. The expanded polymeric microspheres are defined as "a polymer shell and a core material in the form of a gas, liquid, or combination thereof." See the specification, page 9. "Examples of suitable commercially available expandable polymeric microspheres include those available from Pierce Stevens (Buffalo, N.Y.)... [and] Akzo-Novel... The amount of expandable microspheres is selected based upon the desired properties of the foam article." See the specification, page 10. According to page 6 of the specification, "[t]he fire retardant materials suitable for inclusion herein include any of a variety of such substances, but preferably comprise materials that are non-halogenated and antimony-free." "Although fire retardant materials are normally excluded from the formulation for the adhesive, small amounts of fire retardant may also be included within the adhesive at concentrations that are effective to impart fire retardant properties..." See the specification, page 17. Various

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additives can be chosen from a laundry list of conventional additives and are added to the foam or adhesive to obtain the desired end properties. See, e.g., the specification, pages 12 and 18. Details of the appealed subject matter are recited in representative claims 1, 13 and 23² and a copy of these claims is appended to this decision.

PRIOR ART REFERENCES

The prior art references relied upon by the examiner in support of the Section 103 rejection before us are:

Bonk et al. (Bonk)	4,751,269	Jun. 14, 1988
Parsons et al. (Parsons)	5,851,663	Dec. 22, 1998
Gehlsen et al. (Gehlsen)	6,103,152	Aug. 15, 2000
Mochizuki et al. (Mochizuki)	6,139,998	Oct. 31, 2000

REJECTION

Claims 1, 2, 4 through 12 and 15 stand rejected under 35 U.S.C. § 103 as unpatentable over the combined disclosures

² According to the appellants (the Brief, page 11), "[f]or purposes of this appeal, the appealed claims will stand or fall together." Consistent with this position, the appellants have not separately argued the patentability of the invention defined by the individual claims on appeal. See the Brief in its entirety. Therefore, for purposes of this appeal, we select claims 1, 13 and 23 as representative of the claims on appeal subjected to the different grounds of rejection set forth in the Answer and decide the propriety of the examiner's rejections set forth in the Answer based on these claims alone consistent with 37 CFR § 1.192(c)(7) (2003) and 37 CFR § 41.37(c)(1)(vii) (2004).

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of Gehlsen and Parsons. Claims 13 and 14 stand rejected under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Gehlsen, Parsons and Bonk. Claim 23 stands rejected under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Gehlsen, Parsons and Mochizuki.

OPINION

We have carefully reviewed the claims, specification and prior art, including all of the evidence and arguments advanced by both the examiner and the appellants in support of their respective positions. This review has led us to conclude that the examiner's Section 103 rejections are well founded. Accordingly, we affirm the examiner's Section 103 rejections for the findings of fact and conclusions set forth in the Answer and below.

Under Section 103, the obviousness of an invention cannot be established by combining the teachings of the prior art references absent some teaching, suggestion or incentive supporting the combination. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). This does not mean that the cited prior art references must specifically suggest making the combination. B.F.

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Goodrich Co. V. Aircraft Braking Systems Corp., 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996); In re Nilssen, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988)). Rather, the test for obviousness is what the combined teachings of the prior art references would have suggested to those of ordinary skill in the art. In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991); In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). This test requires us to take into account not only the specific teachings of the prior art references, but also any inferences which one skilled in the art would reasonably be expected to draw therefrom. In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

With the above precedents in mind, we turn to the examiner's Section 103 rejections. As is apparent from page 12 of the Brief, the appellants acknowledge that:

Gehlsen... describes articles that include a polymer foam matrix and one or more expandable polymer microspheres. The foam microstructure is characterized by a plurality of enlarged polymeric microspheres distributed throughout the polymer matrix. At least one of the microspheres is still expandable so that, upon the application of heat, it will expand further without breaking. The articles of Gehlsen can include a polymer foam with one or more separate adhesive layers bonded to the foam (col. 2, lines 61-62).

The appellants argue that "Gehlsen does not teach or suggest the inclusion of fire retardant compositions in the foam layer in combination with an adhesive layer formulated without fire retardant." (emphasis original) See the Brief, page 12. We do not agree.

As found by the examiner (the Answer, page 7), Gehlsen, like the appellants, employ various conventional additives, including fire retardants, in the foam layer to "obtain the desired end properties." Compare also Gehlsen, column 8, lines 44-55, with the specification, page 12, lines 6-15. Gehlsen does not mention adding fire retardants to the adhesive layer. See Gehlsen in its entirety. Gehlsen teaches that these foam adhesive articles can be "useful in a variety of application, including aerospace, automotive, and medical application. The properties of the articles are tailored to meet the demands of the desired application." See column 1, lines 55-67 and column 11, lines 42-48. In other words, it can be inferred from Gehlsen that the addition of appropriate conventional additives, including the claimed fire-retardants, to its foam layer to obtain the desired end properties for the desired end application is well within the

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ambit of one of ordinary skill in the art. Compare In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980) (Optimization of a known result effective variable is ordinarily within the ambit of the skill of the art.).

Even if Gehlsen does not teach or suggest that the selection of appropriate fire retardants, such as the claimed fire retardants, is well within the scope of one of ordinary skill in the art, our conclusion would not altered. As correctly found by the examiner (the Answer, pages 3 and 7), Parsons teaches preference for non-halogenated intumescent flame retardants, such as conventional non-halogen phosphorus/nitrogen flame retardants, for adhesive foams used in, e.g., the automotive and aerospace fields. See column 1, lines 5-15, column 2, lines 43-56, and column 3, lines 1-12 and 58-60. According to Parsons (column 2, lines 29-50 and column 1, lines 10-37), these conventional non-halogen phosphorus/nitrogen flame retardants contain desired fire retardant components and reduce smoke production or toxicity problem associated with the conventional halogenated non-intumescent flame retardants.

Given the above teachings, we concur with the examiner that one of ordinary skill in the art would have been led to employ

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the non-halogen phosphorus/nitrogen flame retardants taught in Parsons for Gehlsen's automotive and aerospace articles, with a reasonable expectation of successfully obtaining the advantages stated in Parsons.

The appellants argue that "it was unexpected that a foam article made to comprise these combustible materials could be made to be fire retardant, especially in view of the concentration of expanded microspheres that may be present with the foam material of the present invention..." See the Brief, page 15. However, the appellants' argument is not supported by any objective evidence. In re De Blauwe, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984); In re Lindner, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972). It is well settled that a showing of unexpected results must be supported by factual evidence. Lindner, 457 F.2d at 508, 173 USPQ at 358 ("mere lawyers' arguments unsupported by factual evidence are insufficient to establish unexpected results"). Moreover, as indicated supra, Gehlsen teaches or would have suggested the formation of such foam articles containing fire retardants, thus providing a reasonable expectation of successfully forming the claimed foam articles.

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Thus, based on the totality of record, including due consideration of the appellants' arguments, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of 35 U.S.C. § 103. Accordingly, we affirm the examiner's decision rejecting claims 1, 2, 4 through 12 and 15 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Gehlsen and Parsons.

With respect to claims 13, 14 and 23, the appellants do not challenge the examiner's position regarding obviousness of the limitations recited therein. Compare the Answer, page 6, with the Brief, pages 15-16. The appellants only rely upon the same arguments addressed above. See the Brief, pages 15-16. Thus, for the same reasons set forth above, we affirm the examiner's decision rejecting claims 13 and 14 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Gehlsen, Parsons and Bonk and claim 23 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Gehlsen, Parsons and Mochizuki.

CONCLUSION


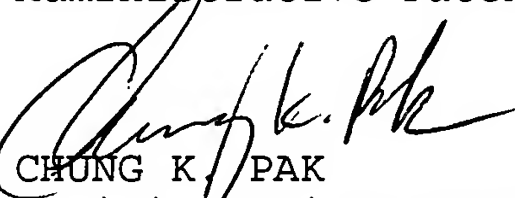
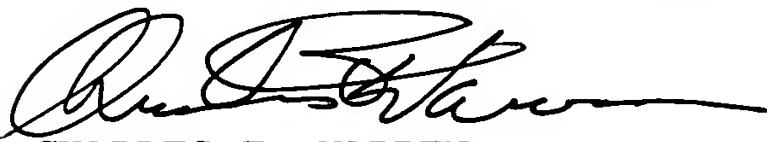
In view of the foregoing, we affirm the examiner's decision rejecting all of the claims on appeal under 35 U.S.C. § 103.

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TIME PERIOD

No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a)(1)(iv).

AFFIRMED


EDWARD C. KIMLIN)
Administrative Patent Judge)

CHUNG K. PAK)
Administrative Patent Judge)

CHARLES F. WARREN)
Administrative Patent Judge)

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APPENDIX
Claims 1, 13 and 23

1. A flame retardant article, comprising:

An expanded polymeric foam material comprising a polymer, antimony-free fire retardant, and a plurality of expanded polymeric microspheres, the foam material having an outer surface, the expanded polymeric foam material is a sheet and the outer surface comprises a first major surface and a second major surface; and

An adhesive layer formulated without fire retardant and disposed on at least a portion of one of the first or second major surfaces;

Wherein the amount of expanded polymeric microspheres is from about 0.1 parts by weight to about 20 parts by weight based on 100 parts by weight of polymer.

13. An article according to claim 1 wherein one or both of the foam and the adhesive layer further comprises microfibers imparting stretch release properties to the article, the microfibers being selected from the group consisting of polymeric microfibers, viscoelastic microfibers, elastic microfibers, and combinations of the foregoing.

23. The flame retardant article of claim 1 wherein the antimony-free fire retardant is tris(bromoneopentyl)phosphate.